

## Virtual laboratory "geoinformation systems"

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### Abstract

© 2018, International Multidisciplinary Scientific Geoconference. All rights reserved. In this paper the approach to virtual laboratory "Geoinformation Systems" creation is proposed. Virtual laboratory is a complicated system that consists of a lot of hardware and software tools. The laboratory was created in order to improve the quality of education in the fields of geoinformatics and information technologies. The laboratory provides scientific support of the educational process, integration of innovative research and educational activities. During the course of self-study, students have the opportunity to communicate with each other, and thereby to develop the skills of collective work on large projects using modern and advanced information technology. The students work with knowledge base on the three levels of control: training testing; control testing with evaluation of knowledge; final testing, the results of which automatically generates an academic records. The laboratory provides comprehensive support for the scientific and educational activities – from training sessions (lectures, seminars etc.) with the use of modern educational technology to independent research work of students. In addition, the laboratory is the technological basis for further development and approbation of the concept of electronic research and educational complex: the methodologies of design and creation of hardware, software, information and organizational support, experimental evaluation of the complexity of the implementation of the developed architecture, evaluating the effectiveness of new educational technologies. A variety of different hardware and software tools allow to create a variety of educational routes. The composition and structure of the virtual laboratory is discussed. Experience of using the system is presented. The description of the curriculums and practical works is given.

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### Keywords

E-learning, Electronic scientific-educational complex, Geoinformation technologies, Virtual laboratory

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